



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,703	03/09/2004	Stephen S. Hancock	TIR 2904, 2905	2888

7590 08/01/2006

MICHAEL E. MARTIN
THE TRANE COMPANY
PATENT DEPARTMENT - 12-1
3600 PAMMEL CREEK ROAD
LA CROSSE, WI 54601

EXAMINER

EDGAR, RICHARD A

ART UNIT	PAPER NUMBER
----------	--------------

3745

DATE MAILED: 08/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/796,703

Applicant(s)

HANCOCK, STEPHEN S.

Examiner

Richard Edgar

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-32 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-17 and 19-24 is/are rejected.
- 7) ☒ Claim(s) 6 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Arguments

Applicant's arguments filed 08 May 2006 have been fully considered but they are not persuasive.

Applicant has first argued that the claims 1-5 and 7-13 are patentable since the Plastics Engineering textbook "does not teach the application of a thermoset polymer composition to a blower housing for a motor driven air handling blower." It is noted that the Plastics Engineering textbook was applied under section 103 of title 35 of the United States Code, and not section 102. The reference teaches that thermosetting materials are not heat sensitive, clearly something of importance to a person having ordinary skill in the art of air handling blower housings for furnaces.

Applicant has next requested page 7 from the above citation. Page 7 is not missing. Rather, it was deemed non-relevant, as is evidenced by PTO-892 mailed 19 October 2005, citation "U" listing pages 5-6 and 8-9 only.

Next, Applicant argues Beehler and Sullivan would not normally be combined by a person having ordinary skill in the art.

The examiner disagrees.

The examiner believes one having ordinary skill in the art would be able to provide an opening on both sides of the Beehler housing, as is shown in Sullivan, and explained in the previous Office action, and repeated below.

Next, Applicant argues that the examiner's modification of Beehler to be a thermoset is non-obvious. As stated previously above, the Plastics Engineering text teaches that thermosetting materials are not heat sensitive, clearly something of importance to a person having ordinary skill in the art of air handling blower housings for furnaces. Note, that Beehler is a plastic blower housing for a furnace (see "Background of the Invention", col. 1, lines 6-45).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the Plastics Engineering text recites that thermosets are not heat sensitive. And in the examiner's opinion, a person having ordinary skill in the art of furnaces would appreciate that furnaces produce heat. So, there is a reasonable expectation that a known plastic furnace housing (e.g. Beehler) is made from a plastic that is not heat sensitive (i.e. a thermosetting plastic).

Next, Applicant argues the features of claim 11 are not suggested by the examiner's combination of references.

Applicant's attention is drawn specifically to the second through fourth paragraphs on page 7.

Next, Applicant argues the features of claim 11 are not suggested by the examiner's combination of references.

Again, Applicant's attention is drawn specifically to the second through fourth paragraphs on page 7.

Regarding claim 13, the examiner has held only the recited thermoset composition as a structural limitation, which is met by the combination of references. Applicant's remarks directed toward the method of molding are unpersuasive since this limitation is a product-by-process limitation (see MPEP 2113).

Next, Applicant argues claims 21-23 are patentable because it is unlikely a person having ordinary skill in the art of furnaces would make a plastic furnace housing out of a plastic not sensitive to heat.

This argument is unpersuasive as it does not further argue any points not answered above.

Lastly, for claim 24, Applicant is urged to review the last Office action, specifically the last full paragraph on page 12 and the next paragraph, which explains the product-by-process rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 4,865,517 (Beehler hereinafter) in view of United States Patent No. 5,474,422 (Sullivan hereinafter) in view of *Plastics Engineering*, 3rd edition (by R.J. Crawford).

Beehler discloses a blower housing for a motor 50 driven centrifugal air handling blower, said blower housing comprising: a first housing part 42 including at least a part of an air inlet opening 72 and at least a part of an air discharge opening 48; a second housing part 44 including at least a part of an air discharge opening 48; each of said housing parts 42,44 includes a boss 110, 112 located to be adjacent to a corresponding boss of the other of said housing parts when said housing parts are assembled one to the other; a removable clip 114 adapted to engage said bosses to secure said housing

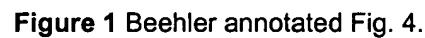
parts to each other (see Fig. 4); and the housing parts are formed of a plastic able to withstand highly corrosive exhaust gases (see col. 2, lines 15-18).

The housing parts 42,44 are connectable to each other at respective peripheral edges disposed along a parting line which lies in a plane generally normal to the axis of rotation of a blower impeller 54 adapted to be disposed in the blower housing (see Fig. 3).

One of the housing parts 42 includes a flange 132 extending along the peripheral edge of the one housing part and the other of the housing parts 44 includes a groove 130 disposed along the peripheral edge of the other housing part for receiving the flange 132 for locating the housing parts in predetermined positioned with respect to each other.

Each of the housing parts include plural spaced apart bosses 115 positioned to be adjacent to corresponding bosses of the other of the housing parts when the housing parts are assembled one to the other, and the blower housing includes respective clips 114 adapted to engage the cooperating bosses to secure the housing parts to each other.

The bosses are tapered toward each other and the clips include opposed tapered flanges engagable with respective one of the bosses for registering the clips with the bosses in a wedge configuration (see Figure 1 below).



The housing parts form a scroll (see Figs. 2 and 3) which housing increases in radial direction and axial direction toward the outlet.

Beehler does not teach the second housing part 44 having a part of an air inlet opening.

Sullivan shows two blower housing halves assembled together wherein each half 10, 11 has an air inlet 51, 52 for the purpose of exposing the impeller to a greater volume of air.

Since the Beehler blower housing is enclosed in a furnace (see Beehler Fig. 1) and Sullivan teaches that a blower housing should have openings on both sides of the housing for exposing the impeller to a greater volume of air, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the second housing part of Beehler to have part of an air inlet opening therethrough, as taught by Sullivan, for the purpose of exposing the impeller to a greater volume of air.

Beehler in view of Sullivan does not teach if the plastic material is a fibre reinforced thermoset polymer, including a polyester resin.

Plastics Engineering describes that thermosetting plastics are not sensitive to heat (see sentence bridging pages 5 and 6), and that fibre reinforcements are used in thermoset plastics for the purpose of increasing the strength of the material (see pages 8-9), including a polyester resin impregnated with glass fibers (page 9).

Since the Beehler in view of Sullivan plastic blower housing is utilized in a furnace, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the plastic blower housing of Beehler in view of Beehler from a thermosetting fibre reinforced plastic (polyester resin), for the purpose of rendering the blower housing not sensitive to heat and maximizing the strength of the plastic, as described in *Plastics Engineering*.

Claims 14-17, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 4,865,517 (Beehler hereinafter) in view of *Plastics Engineering*, 3rd edition (by R.J. Crawford).

Beehler shows a blower housing 40 for a motor 50 driven air handling blower, said blower housing comprising: a first housing part 42; a second housing part 44; said housing parts being connectable to each other along cooperating peripheral edges of the housing parts extending generally normal to an axis of rotation of a blower impeller 54 adapted to be disposed in the blower housing (see Fig. 3); and the housing parts are formed of a plastic able to withstand highly corrosive exhaust gases (see col. 2, lines 15-18).

One of the housing parts 42 includes a flange 132 extending along the peripheral edge of the one housing part and the other of the housing parts 44 includes a groove 130 disposed along the peripheral edge of the other housing part for receiving the flange 132 for locating the housing parts in predetermined positioned with respect to each other.

Each of the housing parts include plural spaced apart bosses 115 positioned to be adjacent to corresponding bosses of the other of the housing parts when the housing parts are assembled one to the other, and the blower housing includes respective clips 114 adapted to engage the cooperating bosses to secure the housing parts to each other.

The bosses are tapered toward each other and the clips include opposed tapered flanges engagable with respective one of the bosses for registering the clips with the bosses in a wedge configuration (see Figure 1 above).

Beehler does not teach if the plastic material is a fibre reinforced thermoset polymer.

Plastics Engineering describes that thermosetting plastics are not sensitive to heat (see sentence bridging pages 5 and 6), and that fibre reinforcements are used in thermoset plastics for the purpose of increasing the strength of the material (see pages 8-9).

Since the Beehler plastic blower housing is utilized in a furnace, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the plastic blower housing of Beehler from a thermosetting fibre reinforced plastic, for the purpose of rendering the blower housing not sensitive to heat and maximizing the strength of the plastic, as described in *Plastics Engineering*.

The claimed phrase "formed by compression molding" is being treated as a product by process limitation; that is, that the blower housing is made by compression molding. As set forth in MPEP 2113, product by process claims are NOT limited to the manipulations of the recited steps, only to the structure implied by the steps. Once a product appearing to be substantially the same or similar is found, a 35 USC 102/103

rejection may be made and the burden is shifted to applicant to show an unobvious difference. See MPEP 2113.

Thus, even though Beehler is silent as to the process used to mold the fibre reinforced thermoset plastic blower housing, it appears that the product in Beehler would be the same or similar as that claimed; especially since both applicant's product and the prior art product are made of a molded thermoplastic material and used in a hot corrosive environment.

Claim 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 4,865,517 (Beehler hereinafter) in view of United States Patent No. 5,474,422 (Sullivan hereinafter).

Beehler discloses a blower housing for a motor 50 driven centrifugal air handling blower, said blower housing comprising: a first housing part 42 including at least a part of an air inlet opening 72 and at least a part of an air discharge opening 48; a second housing part 44 including at least a part of an air discharge opening 48; each of said housing parts 42,44 includes a boss 110, 112 located to be adjacent to a corresponding boss of the other of said housing parts when said housing parts are assembled one to the other; and a removable clip 114 adapted to engage said bosses to secure said housing parts to each other (see Fig. 4).

The bosses are tapered toward each other and the clip includes opposed tapered flanges engagable with respective ones of the bosses for registering the clip with the bosses in a wedged condition (see Figure 1 above).

Each of the housing parts include plural spaced apart bosses 115 positioned to be adjacent to corresponding bosses of the other of the housing parts when the housing parts are assembled one to the other, and the blower housing includes respective clips 114 adapted to engage the cooperating bosses to secure the housing parts to each other.

Beehler does not teach the second housing part 44 having a part of an air inlet opening.

Sullivan shows two blower housing halves assembled together wherein each half 10, 11 has an air inlet 51, 52 for the purpose of exposing the impeller to a greater volume of air.

Since the Beehler blower housing is enclosed in a furnace (see Fig. 1) and Sullivan teaches that a blower housing should have openings on both sides of the housing for exposing the impeller to a greater volume of air, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the second housing part of Beehler to have part of an air inlet opening therethrough, as taught by Sullivan, for the purpose of exposing the impeller to a greater volume of air.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 4,865,517 (Beehler hereinafter) in view of United States Patent No.

Art Unit: 3745

5,474,422 (Sullivan hereinafter) as applied to claim 21 above, and further in view of *Plastics Engineering*, 3rd edition (by R.J. Crawford).

Beehler in view of Sullivan teaches a plastic blower housing, but not a reinforced thermoset housing.

Plastics Engineering describes that thermosetting plastics are not sensitive to heat (see sentence bridging pages 5 and 6), and that fibre reinforcements are used in thermoset plastics for the purpose of increasing the strength of the material (see pages 8-9).

Since the Beehler plastic blower housing is utilized in a furnace, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the plastic blower housing of Beehler from a thermosetting fibre reinforced plastic, for the purpose of rendering the blower housing not sensitive to heat and maximizing the strength of the plastic, as described in *Plastics Engineering*.

The claimed phrase "formed of a compression molded reinforced thermoset" is being treated as a product by process limitation; that is, that the reinforced thermoset blower housing is made by compression molding. As set forth in MPEP 2113, product by process claims are NOT limited to the manipulations of the recited steps, only to the structure implied by the steps. Once a product appearing to be substantially the same or similar is found, a 35 USC 102/103 rejection may be made and the burden is shifted to applicant to show an unobvious difference. See MPEP 2113.

Thus, even though Beehler is silent as to the process used to mold the plastic blower housing, it appears that the product in Beehler would be the same or similar as

Art Unit: 3745

that claimed; especially since both applicant's product and the prior art product are made of a molded plastic material and used in a hot corrosive environment.

Allowable Subject Matter

Claims 25-32 are allowed.

Claims 6 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 6 and 18 each requires the clip(s) to have a detent member disposed in a boss recess. Beehler does not fairly suggest such a securing feature, and one having ordinary skill in the art would not add such a feature to the Beehler clip since the Beehler clip locks by a spring force and not a detent/recess engagement.

Method claims 25-32 require, in addition to the Swin reference (WO 95/32363) teachings of securing two housing parts 12, 13 together with an impeller 15 therein between, a support bracket mounted on a fixture and one of the housing parts mounted on the support bracket. One having ordinary skill in the art would not have found it obvious at the time the invention was made to utilize a support bracket with the Swin reference since Swin shows to mount the housing to the intended fixture by using a fastener 22 which protrudes 27 from the housing (see page 13, lines 8-12).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

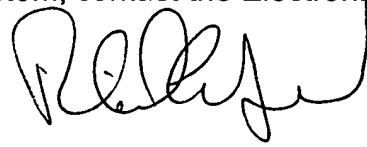
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Edgar whose telephone number is (571) 272-4816. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7 am- 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Richard Edgar
Examiner
Art Unit 3745

RE